Docket No.: CL001183DIVII
S rial No.: (to be assigned)
Inventors: Weiniu GAN t al.
Title: ISOLATED HUMAN KINASE...

```
   1 TCCGGGGTCC GCACCGGGCC TGAGTCGGTC CGAGGCCGTC CCAGGAGCAG
  51 CTGCCCGTGC GGAACAGCAC TATGGGCTTC TCTTCTGAGC TGTGCAGCCC
 101 CCAGGGCCAC GGGGTCCTGC AGCAAATGCA GGAGGCCGAG CTTCGTCTAC
 151 TGGAGGGCAT GAGAAAGTGG ATGGCCCAGC GGGTCAAGAG TGACAGGGAG
 201 TATGCAGGAC TGCTTCACCA CATGTCCCTG CAGGACAGTG GGGGCCAGAG
 251 CCGGGCCATC AGCCCTGACA GCCCCATCAG TCAGTCCTGG GCTGAGATCA
 301 CCAGCCAAAC TGAGGGCCTG AGCCGCTTGC TGCGGCAGCA CGCAGAGGAT
 351 CTGAACTCAG GGCCCCTGAG CAAGCTGAGC CTGCTCATCC GGGAACGGCA
 401 GCAGCTTCGC AAGACCTACA GCGAGCAGTG GCAGCAGCTG CAGCAGGAGC
 451 TCACCAAGAC CCACAGCCAG GACATTGAGA AGCTGAAGAG CCAGTACCGA
 501 GCTCTGGCAC GGGACAGTGC CCAAGCCAAG CGCAAGTACC AGGAGGCCAG
 551 CAAAGACAAG GACCGTGACA AGGCCAAGGA CAAGTATGTG CGCAGCCTGT
 601 GGAAGCTCTT TGCTCACCAC AACCGCTATG TGCTGGGCGT GCGGGCTGCG
 651 CAGCTACACC ACCAGCACCA CCACCAGCTC CTGCTGCCCG GCCTGCTGCG
 701 GTCACTGCAG GACCTGCACG AGGAGATGGC TTGCATCCTG AAGGAGATCC
 751 TGCAGGAATA CCTGGAGATT AGCAGCCTGG TGCAGGATGA GGTGGTGGCC
 801 ATTCACCGGG AGATGGCTGC AGCTGCTGCC CGCATCCAGC CTGAGGCTGA
 851 GTACCAAGGC TTCCTGCGAC AGTATGGGTC CGCACCTGAC GTCCCACCCT
 901 GTGTCACGTT CGATGAGTCA CTGCTTGAGG AGGGTGAACC GCTGGAGCCT
 951 GGGGAGCTCC AGCTGAACGA GCTGACTGTG GAGAGCGTGC AGCACACGCT
1001 GACCTCAGTG ACAGATGAGC TGGCTGTGGC CACCGAGATG GTGTTCAGGC
1051 GGCAGGAGAT GGTTACGCAG CTGCAACAGG AGCTCCGGAA TGAAGAGGAG
1101 AACACCCACC CCCGGGAGCG GGTGCAGCTG CTGGGCAAGA GGCAAGTGCT
1151 GCAAGAAGCA CTGCAGGGGC TGCAGGTAGC GCTGTGCAGC CAGGCCAAGC
1201 TGCAGGCCCA GCAGGAGTTG CTGCAGACCA AGCTGGAGCA CCTGGGCCCC
1251 GGCGAGCCCC CGCCTGTGCT GCTCCTGCAG GATGACCGCC ACTCCACGTC
1301 GTCCTCGGAG CAGGAGCGAG AGGGGGGAAG GACACCCACG CTGGAGATCC
1351 TTAAGAGCCA CATCTCAGGA ATCTTCCGCC CCAAGTTCTC GAACCTGTAC
1401 CGACTGGAAG GGGAAGGCTT TCCTAGCATT CCTTTGCTCA TCGACCACCT
1451 ACTGAGCACC CAGCAGCCCC TCACCAAGAA GAGTGGTGTT GTCCTGCACA
1501 GGGCTGTGCC CAAGGACAAG TGGGTGCTGA ACCATGAGGA CCTGGTGTTG
1551 GGTGAGCAGA TTGGACGGGG GAACTTTGGC GAAGTGTTCA GCGGACGCCT
1601 GCGAGCCGAC AACACCCTGG TGGCGGTGAA GTCTTGTCGA GAGACGCTCC
1651 CACCTGACCT CAAGGCCAAG TTTCTACAGG AAGCGAGGAT CCTGAAGCAG
1701 TACAGCCACC CCAACATCGT GCGTCTCATT GGTGTCTGCA CCCAGAAGCA
1751 GCCCATCTAC ATCGTCATGG AGCTTGTGCA GGGGGGCGAC TTCCTGACCT
1801 TCCTCCGCAC GGAGGGGGCC CGCCTGCGGG TGAAGACTCT GCTGCAGATG
1851 GTGGGGGATG CAGCTGCTGG CATGGAGTAC CTGGAGAGCA AGTGCTGCAT
1901 CCACCGGGAC CTGGCTGCTC GGAACTGCCT GGTGACAGAG AAGAATGTCC
1951 TGAAGATCAG TGACTTTGGG ATGTCCCGAG AGGAAGCCGA TGGGGTCTAT
2001 GCAGCCTCAG GGGGCCTCAG ACAAGTCCCC GTGAAGTGGA CCGCACCTGA
2051 GGCCCTTAAC TACGGCCGCT ACTCCTCCGA AAGCGACGTG TGGAGCTTTG
2101 GCATCTTGCT CTGGGAGACC TTCAGCCTGG GGCCTCCCC CTATCCCAAC
2151 CTCAGCAATC AGCAGACACG GGAGTTTGTG GAGAAGGGGG CCGTCTGCC
2201 CTGCCCAGAG CTGTGTCCTG ATGCCGTGTT CAGGCTCATG GAGCAGTGCT
2251 GGGCCTATGA GCCTGGGCAG CGGCCCAGCT TCAGCACCAT CTACCAGGAG
```

FIG. 1A

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Title: ISOLATED HUMAN KINASE...

```
2301 CTGCAGAGCA TCCGAAAGCG GCATCGGTGA GGCTGGGACC CCCTTCTCAA
2351 GCTGGTGGCC TCTGCAGGCC TAGGTGCAGC TCCTCAGCGG CTCCAGCTCA
2401 TATGCTGACA GCTCTTCACA GTCCTGGACT CCTGCCACCA GCATCCACAC
2451 TGCCGGCAGG ATGCAGCGCC GTGTCCTCTC TGTGTCCCTG CTGCTGCCAG
2501 GGCTTCCTCT TCCGGGCAGA AACAATAAAA CCACTTGTGC CCACTGAAAA
2551 AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
2601 AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA AAAAAAAAAA
2651 AAAAAAAAAA AAAAAAAAAA AAAA   (SEQ ID NO:1)
```

FEATURES:
5'UTR: 1-71
Start Codon: 72
Stop Codon: 2328
3'UTR: 2331

Homologous proteins:
Top 10 BLAST Hits

	Score	E
CRA|18000004928524 /altid=gi|4503687 /def=ref|NP_001996.1| feli...	1364	0.0
CRA|18000004928925 /altid=gi|400127 /def=sp|P07332|FES_HUMAN PR...	1361	0.0
CRA|335001098689057 /altid=gi|11433086 /def=ref|XP_007718.1| fe...	1361	0.0
CRA|18000004944482 /altid=gi|66835 /def=pir||TVCTFF protein-tyr...	1285	0.0
CRA|18000004883448 /altid=gi|1345986 /def=sp|P14238|FES_FELCA P...	1285	0.0
CRA|18000004938794 /altid=gi|125356 /def=sp|P16879|FES_MOUSE PR...	1249	0.0
CRA|18000004944484 /altid=gi|125354 /def=sp|P00543|FES_FSVST TY...	647	0.0
CRA|18000004958077 /altid=gi|323873 /def=gb|AAA43041.1| (J02087...	621	e-176
CRA|18000004944483 /altid=gi|125353 /def=sp|P00542|FES_FSVGA TY...	621	e-176
CRA|108000000500738 /altid=gi|7548235 /def=gb|AAA43046.2| (J020...	603	e-171

BLAST dbEST hits:

	Score	E
gi|12875454 /dataset=dbest /taxon=960...	1669	0.0
gi|12259598 /dataset=dbest /taxon=960...	924	0.0
gi|5526793 /dataset=dbest /taxon=9606 ...	856	0.0
gi|1501859 /dataset=dbest /taxon=9606 ...	722	0.0
gi|9097978 /dataset=dbest /taxon=9606...	714	0.0
gi|6131861 /dataset=dbest /taxon=9606 ...	682	0.0
gi|12447497 /dataset=dbest /taxon=96...	674	0.0

FIG. 1B

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Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

EXPRESSION INFORMATION FOR MODULATORY USE:
library source:
From BLAST dbEST hits:
gi|12875454 Placenta
gi|12259598 Lung-tumor
gi|5526793 Kidney 2 pooled tumors
gi|1501859 Pregnant uterus
gi|9097978 Pediatric ore-B cell lymphoblastic leukemia
gi|6131861 Stomach poorly differentiated adenocarcinoma with signet ring ells
gi|12447497 Placenta normal

From tissue screening panels:
Hippocampus

FIG. 1C

Docket No.: CL001183DIVII
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Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

```
  1 MGFSSELCSP QGHGVLQQMQ EAELRLLEGM RKWMAQRVKS DREYAGLLHH
 51 MSLQDSGGQS RAISPDSPIS QSWAEITSQT EGLSRLLRQH AEDLNSGPLS
101 KLSLLIRERQ QLRKTYSEQW QQLQQELTKT HSQDIEKLKS QYRALARDSA
151 QAKRKYQEAS KDKDRDKAKD KYVRSLWKLF AHHNRYVLGV RAAQLHHQHH
201 HQLLLPGLLR SLQDLHEEMA CILKEILQEY LEISSLVQDE VVAIHREMAA
251 AAARIQPEAE YQGFLRQYGS APDVPPCVTF DESLLEEGEP LEPGELQLNE
301 LTVESVQHTL TSVTDELAVA TEMVFRRQEM VTQLQQELRN EEENTHPRER
351 VQLLGKRQVL QEALQGLQVA LCSQAKLQAQ QELLQTKLEH LGPGEPPPVL
401 LLQDDRHSTS SSEQEREGGR TPTLEILKSH ISGIFRPKFS NLYRLEGEGF
451 PSIPLLIDHL LSTQQPLTKK SGVVLHRAVP KDKWVLNHED LVLGEQIGRG
501 NFGEVFSGRL RADNTLVAVK SCRETLPPDL KAKFLQEARI LKQYSHPNIV
551 RLIGVCTQKQ PIYIVMELVQ GGDFLTFLRT EGARLRVKTL LQMVGDAAAG
601 MEYLESKCCI HRDLAARNCL VTEKNVLKIS DFGMSREEAD GVYAASGGLR
651 QVPVKWTAPE ALNYGRYSSE SDVWSFGILL WETFSLGASP YPNLSNQQTR
701 EFVEKGGRLP CPELCPDAVF RLMEQCWAYE PGQRPSFSTI YQELQSIRKR
751 HR  (SEQ ID NO:2)
```

FEATURES:
Functional domains and key regions:
[1] PDOC00001 PS00001 ASN_GLYCOSYLATION
N-glycosylation site

   693-696 NLSN

[2] PDOC00005 PS00005 PKC_PHOSPHO_SITE
Protein kinase C phosphorylation site

Number of matches: 7
       1   40-42 SDR
       2   468-470 TKK
       3   507-509 SGR
       4   521-523 SCR
       5   557-559 TQK
       6   622-624 TEK
       7   746-748 SIR

[3] PDOC00006 PS00006 CK2_PHOSPHO_SITE
Casein kinase II phosphorylation site

FIG. 2A

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Title: ISOLATED HUMAN KINASE...

Number of matches: 17
```
    1      40-43  SDRE
    2      52-55  SLQD
    3     211-214 SLQD
    4      72-75  SWAE
    5      78-81  SQTE
    6     115-118 TYSE
    7      52-55  SLQD
    8     211-214 SLQD
    9     270-273 SAPD
   10     279-282 TFDE
   11     283-286 SLLE
   12     312-315 SVTD
   13     386-389 TKLE
   14     410-413 SSSE
   15     412-415 SEQE
   16     521-524 SCRE
   17     635-638 SREE
```

[4] PDOC00007 PS00007 TYR_PHOSPHO_SITE
Tyrosine kinase phosphorylation site

Number of matches: 3
```
    1      37-44  RVKSDREY
    2     254-261 RIQPEAEY
    3     636-643 REEADGVY
```

[5] PDOC00008 PS00008 MYRISTYL
N-myristoylation site

Number of matches: 6
```
    1      58-63  GQSRAI
    2     189-194 GVRAAQ
    3     207-212 GLLRSL
    4     366-371 GLQVAL
    5     641-646 GVYAAS
    6     732-737 GQRPSF
```

[6] PDOC00009 PS00009 AMIDATION
Amidation site

```
       354-357 LGKR
```

FIG. 2B

Docket No.: CL001183DIVII
Serial No.: (to be assigned)
Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

[7] PDOC00100 PS00107 PROTEIN_KINASE_ATP
Protein kinases ATP-binding region signature

497-520 IGRGNFGEVFSGRLRADNTLVAVK

[8] PDOC00100 PS00109 PROTEIN_KINASE_TYR
Tyrosine protein kinases specific active-site signature

609-621 CIHRDLAARNCLV

Membrane spanning structure and domains:

Helix	Begin	End	Score	Certainty
1	672	692	1.129	Certain

BLAST Alignment to Top Hit:
>CRA|18000004928524 /altid=gi|4503687 /def=ref|NP_001996.1| feline
         sarcoma (Snyder-Theilen) viral (v-fes)/Fujinami avian
         sarcoma (PRCII) viral (v-fps) oncogene homolog; Oncogene
         FES, feline sarcoma virus [Homo sapiens] /org=Homo
         sapiens /taxon=9606 /dataset=nraa /length=822
         Length = 822

Score = 1364 bits (3491), Expect = 0.0
Identities = 706/822 (85%), Positives = 716/822 (86%), Gaps = 70/822 (8%)
Frame = +3

```
Query: 72    MGFSSELCSPQGHGVLQQMQEAELRLLEGMRKWMAQRVKSDREYAGLLHHMSLQDSGGQS 251
             MGFSSELCSPQGHGVLQQMQEAELRLLEGMRKWMAQRVKSDREYAGLLHHMSLQDSGGQS
Sbjct: 1     MGFSSELCSPQGHGVLQQMQEAELRLLEGMRKWMAQRVKSDREYAGLLHHMSLQDSGGQS 60


Query: 252   RAISPDSPISQSWAEITSQTEGLSRLLRQHAEDLNSGPLSKLSLLIRERQQLRKTYSEQW 431
             RAISPDSPISQSWAEITSQTEGLSRLLRQHAEDLNSGPLSKLSLLIRERQQLRKTYSEQW
Sbjct: 61    RAISPDSPISQSWAEITSQTEGLSRLLRQHAEDLNSGPLSKLSLLIRERQQLRKTYSEQW 120


Query: 432   QQLQQELTKTHSQDIEKLKSQYRALARDSAQAKRKYQEASKDKDRDKAKDKYVRSLWKLF 611
             QQLQQELTKTHSQDIEKLKSQYRALARDSAQAKRKYQEASKDKDRDKAKDKYVRSLWKLF
Sbjct: 121   QQLQQELTKTHSQDIEKLKSQYRALARDSAQAKRKYQEASKDKDRDKAKDKYVRSLWKLF 180


Query: 612   AHHNRYVLGVRAAQLHHQHHHQLLLPGLLRSLQDLHEEMACILKEILQEYLEISSLVQDE 791
             AHHNRYVLGVRAAQLHHQHHHQLLLPGLLRSLQDLHEEMACILKEILQEYLEISSLVQDE
Sbjct: 181   AHHNRYVLGVRAAQLHHQHHHQLLLPGLLRSLQDLHEEMACILKEILQEYLEISSLVQDE 240


Query: 792   VVAIHREMAAAAARIQPEAEYQGFLRQYGSAPDVPPCVTFDESLLEEGEPLEPGELQLNE 971
             VVAIHREMAAAAARIQPEAEYQGFLRQYGSAPDVPPCVTFDESLLEEGEPLEPGELQLNE
Sbjct: 241   VVAIHREMAAAAARIQPEAEYQGFLRQYGSAPDVPPCVTFDESLLEEGEPLEPGELQLNE 300
```

FIG. 2C

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Inventors: W iniu GAN et al.
Title: ISOLATED HUMAN KINASE....

```
Query:  972  LTVESVQHTLTSVTDELAVATEMVFRRQEMVTQLQQELRNEEENTHPRERVQLLGKRQVL 1151
              LTVESVQHTLTSVTDELAVATEMVFRRQEMVTQLQQELRNEEENTHPRERVQLLGKRQVL
Sbjct:  301  LTVESVQHTLTSVTDELAVATEMVFRRQEMVTQLQQELRNEEENTHPRERVQLLGKRQVL 360


Query: 1152  QEALQGLQVALCSQAK-------LQAQQE-----------LLQTKLEHLGPGE------- 1256
              QEALQGLQVALCSQAK       LQ + E           LLQ         E
Sbjct:  361  QEALQGLQVALCSQAKLQAQQELLQTKLEHLGPGEPPPVLLLQDDRHSTSSSEQEREGGR 420


Query: 1257  ----------------------PPPVLLLQDDR--------------------HSTSS 1304
                                    PPP+ L+ + +                    HS
Sbjct:  421  TPTLEILKSHISGIFRPKFSLPPPLQLIPEVQKPLHEQLWYHGAIPRAEVAELLVHSGDF 480


Query: 1305  SEQEREGGRTPTLEILKSHISGIFR-PKFSNLYRLEGEGFPSIPLLIDHLLSTQQPLTKK 1481
                 +E +G +   L +L    + F    NLYRLEGEGFPSIPLLIDHLLSTQQPLTKK
Sbjct:  481  LVRESQGKQEYVLSVLWDGLPRHFIIQSLDNLYRLEGEGFPSIPLLIDHLLSTQQPLTKK 540


Query: 1482  SGVVLHRAVPKDKWVLNHEDLVLGEQIGRGNFGEVFSGRLRADNTLVAVKSCRETLPPDL 1661
              SGVVLHRAVPKDKWVLNHEDLVLGEQIGRGNFGEVFSGRLRADNTLVAVKSCRETLPPDL
Sbjct:  541  SGVVLHRAVPKDKWVLNHEDLVLGEQIGRGNFGEVFSGRLRADNTLVAVKSCRETLPPDL 600


Query: 1662  KAKFLQEARILKQYSHPNIVRLIGVCTQKQPIYIVMELVQGGDFLTFLRTEGARLRVKTL 1841
              KAKFLQEARILKQYSHPNIVRLIGVCTQKQPIYIVMELVQGGDFLTFLRTEGARLRVKTL
Sbjct:  601  KAKFLQEARILKQYSHPNIVRLIGVCTQKQPIYIVMELVQGGDFLTFLRTEGARLRVKTL 660


Query: 1842  LQMVGDAAAGMEYLESKCCIHRDLAARNCLVTEKNVLKISDFGMSREEADGVYAASGGLR 2021
              LQMVGDAAAGMEYLESKCCIHRDLAARNCLVTEKNVLKISDFGMSREEADGVYAASGGLR
Sbjct:  661  LQMVGDAAAGMEYLESKCCIHRDLAARNCLVTEKNVLKISDFGMSREEADGVYAASGGLR 720


Query: 2022  QVPVKWTAPEALNYGRYSSESDVWSFGILLWETFSLGASPYPNLSNQQTREFVEKGGRLP 2201
              QVPVKWTAPEALNYGRYSSESDVWSFGILLWETFSLGASPYPNLSNQQTREFVEKGGRLP
Sbjct:  721  QVPVKWTAPEALNYGRYSSESDVWSFGILLWETFSLGASPYPNLSNQQTREFVEKGGRLP 780


Query: 2202  CPELCPDAVFRLMEQCWAYEPGQRPSFSTIYQELQSIRKRHR 2327
              CPELCPDAVFRLMEQCWAYEPGQRPSFSTIYQELQSIRKRHR
Sbjct:  781  CPELCPDAVFRLMEQCWAYEPGQRPSFSTIYQELQSIRKRHR 822   (SEQ ID NO:4)
```

Hmmer search results (Pfam):

Model	Description	Score	E-value	N
CE00287	CE00287 PTK_Eph_orphan_receptor	285.3	7.8e-82	1
PF00069	Eukaryotic protein kinase domain	271.5	1.1e-77	1
CE00292	CE00292 PTK_membrane_span	240.7	2.1e-68	1
CE00290	CE00290 PTK_Trk_family	232.7	5.4e-66	1
CE00291	CE00291 PTK_fgf_receptor	190.3	3e-53	1
CE00031	CE00031 VEGFR	149.8	6.1e-45	2

FIG. 2D

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PF00611	Fes/CIP4 homology domain	149.0	1.9e-42	1
CE00334	E00334 urotrophin_receptor	143.6	3.5e-45	1
CE00286	E00286 PTK_EGF_receptor	141.3	1.7e-38	1
CE00204	CE00204 FIBROBLAST_GROWTH_RECEPTOR	124.9	8.1e-34	2
CE00288	CE00288 PTK_Insulin_receptor	110.9	2.5e-29	1
CE00202	CE00202 EPHRIN_TYPE_A_RECEPTOR	108.3	1.9e-29	3
CE00203	CE00203 ERBB_RECEPTOR	81.8	2.1e-22	1
CE00549	CE00549 NGFR	69.2	7.4e-20	1
CE00201	CE00201 EPHRIN_TYPE_B_RECEPTOR	57.0	5.9e-15	4
CE00359	E00359 bone_morphogenetic_protein_receptor	26.3	9.4e-07	1
PF00017	Src homology domain 2	10.4	0.024	1
PF00422	ATP synthase Alpha chain, C terminal	7.7	0.11	1
CE00289	CE00289 PTK_PDGF_receptor	-33.8	8.2e-05	1
CE00016	CE00016 GSK_glycogen_synthase_kinase	-290.0	1.2	1

Parsed for domains:

Model	Domain	seq-f	seq-t		hmm-f	hmm-t		score	E-value
PF00611	1/1	1	94	[.	1	109	[]	149.0	1.9e-42
PF00422	1/1	210	234	..	111	135	.]	7.7	0.11
PF00017	1/1	441	460	..	60	79	.]	10.4	0.024
CE00201	1/4	497	510	..	662	675	..	0.1	17
CE00202	1/3	497	511	..	680	694	..	3.2	2.4
CE00202	2/3	534	557	..	721	744	..	5.3	0.63
CE00201	2/4	534	567	..	702	735	..	4.2	1.3
CE00031	1/2	483	580	..	868	972	..	4.5	0.17
CE00289	1/1	489	588	..	1	109	[]	-33.8	8.2e-05
CE00204	1/2	600	636	..	649	685	..	68.1	3.5e-18
CE00201	3/4	598	636	..	766	804	..	21.3	2.9e-05
CE00359	1/1	495	636	..	145	299	..	26.3	9.4e-07
CE00204	2/2	653	692	..	702	741	..	56.1	7.1e-15
CE00201	4/4	653	697	..	824	868	..	30.5	9.5e-08
CE00334	1/1	490	734	..	539	803	..	143.6	3.5e-45
CE00203	1/1	598	737	..	850	989	..	81.8	2.1e-22
CE00202	3/3	598	740	..	827	970	..	99.5	5.2e-27
CE00290	1/1	491	744	..	1	282	[]	232.7	5.4e-66
CE00291	1/1	491	744	..	1	285	[]	190.3	3e-53
CE00286	1/1	491	744	..	1	263	[]	141.3	1.7e-38
CE00292	1/1	491	744	..	1	288	[]	240.7	2.1e-68
CE00031	2/2	598	744	..	1056	1203	..	145.3	1.4e-43
CE00287	1/1	491	744	..	1	260	[]	285.3	7.8e-82
CE00288	1/1	491	744	..	1	269	[]	110.9	2.5e-29
CE00549	1/1	598	745	..	693	840	..	69.2	7.4e-20
PF00069	1/1	491	746	..	1	278	[]	271.5	1.1e-77
CE00016	1/1	431	751	..	1	433	[]	-290.0	1.2

FIG. 2E

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Title: ISOLATED HUMAN KINASE...

```
   1 CTGGCCACCA GGCTGGCGCA GCCAAGGCCG AAGCTCTGGC TGAACCCTGT
  51 GCTGGTGTCC TGACCACCCT CCCCTCTCTT GCACCCGCCT CTCCCGTCAG
 101 GGCCCAAGTC CCTGTTTTCT GAGCCCGGGC TGCCTGGGCT GTTGGCACTC
 151 ACAGACCTGG AGCCCCTGGG TGGGTGGTGG GGAGGGGCGC TGGCCCAGCC
 201 GGCCTCTCTG GCCTCCCACC CGATGCTGCT TTCCCCTGTG GGGATCTCAG
 251 GGGCTGTTTG AGGATATATT TTCACTTTGT GATTATTTCA CTTTAGATGC
 301 TGATGATTTG TTTTTGTATT TTTAATGGGG GTAGCAGCTG GACTACCCAC
 351 GTTCTCACAC CCACCGTCCG CCCTGCTCCT CCCTGGCTGC CCTGGCCCTG
 401 AGGTGTGGGG GCTGCAGCAT GTTGCTGAGG AGTGAGGAAT AGTTGAGCCC
 451 CAAGTCCTGA AGAGGCGGGC CAGCCAGGCG GGCTCAAGGA AAGGGGGTCC
 501 CAGTGGGAGG GGCAGGCTGA CATCTGTGTT TCAAGTGGGG CTCGCCATGC
 551 CGGGGGTTCA TAGGTCACTG GCTCTCCAAG TGCCAGAGGT GGGCAGGTGG
 601 TGGCACTGAG CCCCCCCAAC ACTGTGCCCT GGTGGAGAAA GCACTGACCT
 651 GTCATGCCCC CCTCAAACCT CCTCTTCTGA CGTGCCTTTT GCACCCCTCC
 701 CATTAGGACA ATCAGTCCCC TCCCATCTGG GAGTCCCCTT TTCTTTTCTA
 751 CCCTAGCCAT TCCTGGTACC CAGCCATCTG CCCAGGGGTG CCCCCTCCTC
 801 TCCCATCCCC CTGCCCTCGT GGCCAGCCCG GCTGGTTTTG TAAGATACTG
 851 GGTTGGTGCA CAGTGATTTT TTTCTTGTAA TTTAAACAGG CCCAGCATTG
 901 CTGGTTCTAT TTAATGGACA TGAGATAATG TTAGAGGTTT TAAAGTGATT
 951 AAACGTGCAG ACTATGCAAA CCAGGCCCAG TCTCCAGTGT GGTACCGTTG
1001 CTCCTGCATC GCAGCTGAGG ATAGGGGGCC AGTTAGGCCT ACACAGTGGC
1051 CTGCCTGCCT GGATGTGGGC CCAAGTCAGA AGGCCAAAGT CCTCCAAGGG
1101 GCGGGAGGAT GCGCCAGCCC CTAGTGGAGG AGCTGGTGCC CCTGGGGTGG
1151 GGCTGGTGAC CCCTGGTCCT CAGGAGCTGA GCACTAAACT CCCAAAGTCC
1201 TGGTTTCCAG CAGTGTGAAG AACTGGGCCT ATTGTGTCTT CCTGGGCTGA
1251 AGTGATCTGG TCGCCACAGG CTATAGGGCT GAGGCCTAAG GTGGAGGGAG
1301 GCCTGACTGA ATCAAGATGA CTTCTTGTGG GGAGCCTGAG TCCCAAATGG
1351 AAAACTCCAC GCCTGTCCGC TCCCCAACCC CTGCCCCTTG ATTTCCCCAG
1401 GTCTCCCTTG GGACAGGAAG CCCCTGCCTG GGGGTAGGAG GATGGGGACA
1451 AAACCACTAG GATCTGTATC CGAGAAGCAG TCTCTGTTCG GGATATTTAC
1501 TTGGAAATTT TATTCAAATG GAAGCTGGCG CCTGAGCCTC TCCTTAGGGA
1551 ATTCCGTGAG GTGGGGAGGG CTGGGACCAG GGTTCCCTCT TTCTCTTCTG
1601 CGGTGGCCCT GGCCTGGTGC TAGGACTGCG CGCCTCCCCT CAGTACCCGC
1651 GGACACCCTG GGCTTCCCTG GGCCCAGCAT CTGCCTGGGG CCTCGCCCTG
1701 GGCTCCCCCT CCTGACCCCC ACCTTGCGCC CCTTCCCGGT GTTCCCGGGG
1751 CGCTGCCGGG CCCTGGGGCC TGCGGGGCGC GGGCGGCTCT TGGCTGGGCC
1801 ATTCTTTCCC GGCCCCCTCC TCCCTTCCGT TTCCGTGGCC GTGCGGCCGG
1851 CTAGAGGCTG CGGCCCAGCG CGGAGCAGGG GGGCTGGCAG GCGTCGGGAC
1901 GGTCGGGCCG GTCCCGCCCG CCCCTTCCCC TCCACAGGCC CGCCCCGGGG
1951 CCTGGGCCAA CTGAAACCGC GGGAGGAGGA AGCGCGGAAT CAGGAACTGG
2001 CCGGGGTCCG CACCGGGCCT GAGTCGGTCC GAGGCCGTCC CAGGAGCAGC
2051 TGCCCGTGCG GGTACCTCTA GCCCCGGGGC CTGGAGGAGC GGTGGGAGCT
2101 GGGGGCGCGG CAGGCAGGGG CAGAGCAGGC GTTCCGAGGG CCAGAGACCC
2151 ACCCAGGTGG GGGTAGGGGC CGCGGAAGGG CGGGGATGGC CGCAGGGGCA
2201 GGGCTCAGGC TGTGGGCGCC TGAGGCTTCA GCTGGGGCAG GCTTGGCCTG
2251 TCGAGGACCT GGGCAAGGGT GTCCCTGTAA GGGGTGGTGG GTGGAAGGGC
```

FIG. 3A

Dock t No.: CL001183DIVII
Serial No.: (to be assigned)
Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

2301 CTGGGGAGGG AGGCTCCAGG TTGGCTCCTG TTCCCGAACG TGCGGAGGAG
2351 ACCCTGACGC TAAGGAAGCA ATGAGGGCCA GTCCCCAGGC CAGGCTGCTG
2401 CTGGGTACCC ATGGCTGCGT GTGAGCGAGG CAGGACCCCA CCTCCTCCCC
2451 GTCTGCAGTC CATCCTGACC CTACAGTCCC CAGCCTCCTC GTCCCATGCC
2501 TCCGTCTCCA GCTGCTGCCT TGCCTCCAGG GATGGCCCCT TTTCTGTCCC
2551 CAGAACAGCA CTATGGGCTT CTCTTCTGAG CTGTGCAGCC CCCAGGGCCA
2601 CGGGGTCCTG CAGCAAATGC AGGAGGCCGA GCTTCGTCTA CTGGAGGGCA
2651 TGAGAAAGTG GATGGCCCAG CGGGTCAAGA GTGACAGGGA GTATGCAGGA
2701 CTGCTTCACC ACATGTCCCT GCAGGACAGT GGGGGCCAGA GCCGGGCCAT
2751 CAGCCCTGAC AGCCCCATCA GTCAGGTGGG TCTCTATGGG ACTCTGGTGG
2801 GTGCTGGCGT ATCTGCCTTC TCCTTCCTCT CCTGGGGGCC CTCTGGGGCA
2851 GTGGCTGGAG ATCTGGCAGG CCAATGCTTG GGAGCCATTG TGCCCCCCTC
2901 CCTGCCTCCC CCATCTGTGC TGTATAGTCC TGGGCTGAGA TCACCAGCCA
2951 AACTGAGGGC CTGAGCCGCT TGCTGCGGCA GCACGCAGAG GATCTGAACT
3001 CAGGGCCCCT GAGCAAGCTG AGCCTGCTCA TCCGGGAACG GCAGCAGCTT
3051 CGCAAGACCT ACAGCGAGCA GTGGCAGCAG CTGCAGCAGG AGCTCACCAA
3101 GGTGAGCGGG CAGCACTGGG GCTTCGGTCA TTTCTGTCTA AATTTTGAGC
3151 CTCGAAGGGG TTGTTTTGCA CAAGAGGCCC TGGATTCACT GGGGAAGTGT
3201 AAGTCCCTGA CCGCAGGCCT GGCTTGCTCT AACCTTGATG TAGCTTCCTC
3251 TCTTCCTTCC CCTACGTTGA GCTGGCTTGC AGCAAGGCCT CTCTGTGCTT
3301 TTTCTGTGCC TGGGCAAAGT GCTGGGAGTG TAAGGATGAG TGACCGGTCA
3351 CGTGCCTGGG AGAAGCTCAG AATCGGTACT CGCCTCCACA CTGTGCCATC
3401 TGGCTCTGGG TTCTGAGAGT CAGGGAGAGG AATGAGGGTC AGTCTGTTTG
3451 CCTTCGACCT ATGCAGCCTC CTCTCAGGGC CCCAGAGACT GGGCAGCAGC
3501 ATGGCCCCCC GAAGGTCGAG GACTCGGGCC GTGAAGTCAG CCTGCCTAGG
3551 TTTGAATCCC ACCCAGCTCC TCAGTCTAGA GGCTGTGTGA TTTGGAACTA
3601 TTTATCTGGG AGCCTAGTGC CCCCATTCAG TGTGCTGGTC ACCCTCCCTG
3651 CACCACACCC CTTCCTCAAG TGCAGAGCCC AGCCTTGCCA TGGACCCACA
3701 GCGGCCCCTG GTGGCCACCC TGGCCCCATT CCTCGCCCCA AAAGATCATC
3751 TGATTCAAGG GTGGGCCCAT TTTTATAAAG TTTTGCTGGA ACACAGCTAT
3801 GCCCCTTTGT TTTCATATTG TCTGTGACTA CAATGACAGA GTTGAGTAAT
3851 TGTGACAGAG GCTCTATGGC CTACAAGCCT AAAATATTTA TTTACTATCT
3901 GGCCCTTTAA GAAAAAGACT GATCTAGTCG AGGAATCTAG CTCAGTTACA
3951 GATGGGGAAA CTGAGGTTGG GCGCTTGCCC AACATATCCC AGCACATAAA
4001 CAGGAGAACT GGGACGAGAA CACTGATCTC GGGCTGTCAT CTATTCCTAC
4051 TGCCAAGAAC ATAATTTGCA GGACCCAGTG CAAAGTGAAA TTGTGGGGGT
4101 CTTTGTTAAA AGATTGCTAG GAATTTCCAG GTGGCAATAA TGGAGAATGA
4151 AACCAAGCAC AGGGCCCTTC TACATGTGGA GCCCCGTGTG ACTGCACAGG
4201 CCGTGCACAC CTGCAACTGG CCCTGCCTGC CACCAGGCTA CCACTGTCAG
4251 TCCAAGGAGG GACCGTTGTA GCCTGTAGTC TACCTCTTTG CCTCCCCAAG
4301 GGGTCTGTCT TCAACAGGCT CTCTGATCTT TGACTCTCAC GTCAGCAGCC
4351 AGCTTTCCCA GAAGTCTCCA GGTGCTCCTT GCCTGACGAC AGGACCTTTC
4401 CAGGGCTTCA CCCCAGGCAA GAATCTTCCA CAACTGGGGA CCTGCTGCCC
4451 CACACTGGCC TCTCCTCTCT CCCTAGACCC ACAGCCAGGA CATTGAGAAG
4501 CTGAAGAGCC AGTACCGAGC TCTGGCACGG GACAGTGCCC AAGCCAAGCG
4551 CAAGTACCAG GAGGCCAGCA AAGGTTCGTG GCTTCCCTTG CTGGCAGGGA

FIG. 3B

Docket No.: CL001183DIVII
Serial No.: (to be assigned)
Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

```
4601 GGGAATCCGA AGCCAGTGCT GACCTGTCCT TGGGTACCCA GAGAGTGGGG
4651 GCTGCCTGGG CCTCCATGCT GTCATCTATA CCCCTTGCCC CCCTTCTGGC
4701 AGACAAGGAC CGTGACAAGG CCAAGGACAA GTATGTGCGC AGCCTGTGGA
4751 AGCTCTTTGC TCACCACAAC CGCTATGTGC TGGGCGTGCG GGCTGCGCAG
4801 CTACACCACC AGCACCACCA CCAGCTCCTG CTGCCCGGCC TGCTGCGGTC
4851 ACTGCAGGAC CTGCACGAGG AGATGGCTTG CATCCTGTAA GCCCGCAGCC
4901 CCGTCCCCTG GCCCCCACCC TTGAGCAGCC CTAAGCCCAG CCATCAGGCC
4951 CAGAGGCAGG ACCCAGAAAA TCCATTGCTG GGAAGGTGCT GGCCATGTAA
5001 CCACATGAGA ACGGGACCTG GGCCAAGGAT TGGAAACAGG CAACTTACCT
5051 CTGAATTACA CTATTCCAGG GTCTCATTAT TCCAGGGTTT TATTACATTC
5101 ATTGAGCACT GTTCTGGGCT CTGGATTATA CCAGAGAACG ATGGTAGACA
5151 AAAACATCTG TCCTCAGGGA TCTTTCGTGT TAGTGGAGTG AGAATGTGAG
5201 GAGCACTAAG AGCCATGGAG AAAAATAAAG CAAGAGAAGT GGATCGGGAC
5251 CTGGGAGCAC GGAGGCAAGG GAGGAGGTGA CAGTTGTCCA TAGAGTGATC
5301 TGGGAAAGCC TCTTGAGAGG TGACATTCAA AGAGGCCCCT GAGAGGGGTA
5351 CGGGAGTGAA TCATGGGGCT ATTTGGAGAA AGACCATTCC AGAAAGGAGG
5401 ACAGCAATTA CACAGGCCTT GAGGTAGGAG AGTACCAGGG ACTAATAGCC
5451 AGGAACCAGT GGTGCCTCTG AGAGTGAGGG AGGGGGAGAG TCATACACGA
5501 GGCTGGAGGA GGCAGGCGTC AAGGGCTACT GGGTGATAGA AGGTCTAGCA
5551 GGGCCATGGT GAGGACTTTG GCTCTGGGTG AACAAGAATG GCATGATCTG
5601 ACCTCTGTTT TTTTGTTTCA TTTTGTTTTA ACTTTTTTTG AGTCAGAGTC
5651 TCGCTCTGCC GCCCAGGCTA GAGTGCAGTG GCATGATCTC GGCTTACTGC
5701 AACCTCCGCC TCCCAGGTTC AAGTGATTCC CCTGCCTCAG CCTCCCGAGT
5751 AGCTGAAACT ACGGGCATGC GCCACCACAC CCAGCTAATT TTTGTATTTT
5801 TAGTAGAGAC GGGGTTTCAC CATGTTGCCC AGGCTAGTCT CTAATTCCTG
5851 GGCTCAAAGC GATTTGCCTG CCTCTGCCTC CCAAAGTGCC GGGATTACAG
5901 GCATGAGCCA CCATGCCCAG CCCTGACCTC TGTTTTAATA AGGCCACTCT
5951 GGCTGCTGTG CTGCAAATAG ACTTCAGGGA GCAAGGACAG AAGCTGGGAG
6001 GCCAGAGAGC AGGCTGCTTG CCATAATCCA GATCCAAGCT TTTGGCCAGC
6051 TAGGACGGGG AGGTAGCAAT GGAGGTGAGG CGCGGTCAGG TCCTGGGGCA
6101 GGTCCTGGAA GGTGAAGCCA GTGGGATTTC CCTATGGATT GGAAGTGGGG
6151 CGTGAAATAG AGGAGTCAGG GGTCACTCTG GGGATTTGGC CTGGAGCAGC
6201 TGGAAGATGG AGTGGCTGTT AACTTATGTA GGGAAGGCTG TGGGAAGAAG
6251 AGGTTTAGGA GACAAGGATA GCAGTTCATT TATTTATTTA TTTATTTATT
6301 TATTTATTTA TTTATTTAGA GATGTAGTCT CATTCTTTCG CCAGGCTGGA
6351 GTGCAGTGGC GCGATCTTGG CTCACTGCAA CCTCCACCTC CCAGGCTCAA
6401 GCGATTCTCT TGCCTCAGCC TCCCGAGTAG CCAAGTAGCT GGGACTACAG
6451 GCATGTGCCA CCATGCCTGG CTAATTTTTG TATTTGCTTT TTCAGTAGAG
6501 ATGGGGTTTC ACCACGTTAG CCAGGCTGGT CTCGAACTGA CCTCAGGCAA
6551 TCCACCCGCC TCGACCTCCC AGTGTTGGTA TTATAGGCGT GAGCCACTGT
6601 GCCTGGCCCA CTGGATCCTT ATTACAACTG CCAGTGTCCC TCTTATATAT
6651 ATCAGGAAAT AGAAGATTAG GGAGAGGTTA AATAATTTGC CTAGAGTGGC
6701 ATGGCTAGCT CGAAGTGAGG CAGGGGTCAA CCCCAGCCCT GACTCCAAAC
6751 CCAGGGTCCT AGGCCTGAAC TGCCCAGCCT TGCCCAGCCT GAGGCTCCCC
6801 TGACTGGGGA TCCCGTCTCG GGGGCAGGAA GGAGATCCTG CAGGAATACC
6851 TGGAGATTAG CAGCCTGGTG CAGGATGAGG TGGTGGCCAT TCACCGGGAG
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FIG. 3C

Docket No.: CL001183DIVII
Serial N .: (to be assigned)
Inventors: W iniu GAN et al.
Title: ISOLATED HUMAN KINASE...

6901 ATGGCTGCAG CTGCTGCCCG CATCCAGCCT GAGGCTGAGT ACCAAGGCTT
6951 CCTGCGACAG TATGGGTAAG CCCCGTCCTT GCTCCTGCTG GGCCCAGGGC
7001 TGCTGGCCTG TCCACTGACG GGGCGCTGTC CCCCACAGGT CCGCACCTGA
7051 CGTCCCACCC TGTGTCACGT TCGATGAGTC ACTGCTTGAG GAGGGTGAAC
7101 CGCTGGAGCC TGGGGAGCTC CAGCTGAACG AGCTGACTGT GGAGAGCGTG
7151 CAGCACACGT GGGTGGTGGC TTTGCACCTG GGCTGCGGCG GGGCTCCCAG
7201 CAGACCACGA GTGTTTATGT AGGCAGGGCT AGGTCGTGGA GACTGTCCAC
7251 ACAGAGCTGT CACCAGGTGG CCGGGCTTGC TTGGCTCTAC AGGGATGCAC
7301 TGGACCTGGG TTGAGGGGGC AGGAGGGCTC GGTTCTAATG CTGCCCTTCT
7351 CTTGGGTGCA GGCTGACCTC AGTGACAGAT GAGCTGGCTG TGGCCACCGA
7401 GATGGTGTTC AGGCGGCAGG AGATGGTTAC GCAGCTGCAA CAGGAGCTCC
7451 GGAATGAAGA GGAGAACACC CACCCCCGGG AGCGGTGAGT GGGCCCCTGC
7501 CTGCAGCAGC CTCCTGGGCC TCCCTCCCTC CTACCTACCC TAACTGCTGC
7551 TGGCTAGCCG CCGCAGACCG AGCCCTTATT CTTCATCCAC CCTCCCACCC
7601 GCCCCTGCCT GCAGGGTGCA GCTGCTGGGC AAGAGGCAAG TGCTGCAAGA
7651 AGCACTGCAG GGGCTGCAGG TAGCGCTGTG CAGCCAGGCC AAGCTGCAGG
7701 CCCAGCAGGA GTTGCTGCAG ACCAAGCTGG AGCACCTGGG CCCCGGCGAG
7751 CCCCCGCCTG TGCTGCTCCT GCAGGATGAC CGCCACTCCA CGTCGTCCTC
7801 GGTGAGCTGC CCCATCCGCG GCCGCTGCCC GCCACCGGCC TGCCCACCTG
7851 GGGCTGCGCT CCTCATTTTC GCCCTCCCCC TCCCTAAGCC TGGCCACCCG
7901 CTGACGTCTG TCCCTGGCCT CAGGAGCAGG AGCGAGAGGG GGGAAGGACA
7951 CCCACGCTGG AGATCCTTAA GAGCCACATC TCAGGAATCT TCCGCCCCAA
8001 GTTCTCGGTG AGTGGCGCCC AGCCTGGGCC CCCCTACTGT TGTGTTTCGA
8051 GTTTAATCAC TGGGATGTCC TAGAGAGGAG GCTCTGCCCA GGCTGCTTGT
8101 ATTGGGAAGT TCCTCTCTTC CCTGGGATTC CAGGCTGCAG ATGTCCCCAG
8151 ACCCTGCCCC TGTGACCCCT CCCTTTCCAT CGCCCCAGTG TGCTAAAGGG
8201 ACCAGCAACC TCGACTATTC CATGGCTCTC CCTGCTTCAG GAGCGGTTGG
8251 GGGCCTGTGG CCTGGAGGAG GAGGCACCAG CTTGGTTTGG GGTCTTCCTG
8301 CCTGGGCTTC CCTTCCCAGC TCTGCCCAGC GTGAGCCTGG GCCAGTCCAG
8351 TGCCCACTCC AGGGGCCTGT GGATGGCTCT GCATGCCACT CCATGGTTGT
8401 AAGGGCTGAG GGCATATAGG GGGGAGAGAG AGACCCCCGG CTGCCCCCAC
8451 GGCCTCTTCA ACAAGGTGGT TAAGTGACTC CTCCTCGATC CTCCCTTGCC
8501 CAGCTCCCTC CACCGCTGCA GCTCATTCCG GAGGTGCAGA AGCCCCTGCA
8551 TGAGCAGCTG TGGTACCACG GGGCCATCCC GAGGGCAGAG GTGGCTGAGC
8601 TGCTGGTGCA CTCTGGGGAC TTCCTGGTGC GGGAGAGCCA GGGCAAGCAG
8651 GAGTACGTGC TGTCGGTGCT GTGGGATGGT CTGCCCCGGC ACTTCATCAT
8701 CCAGTCCTTG GATGTGAGTG GGGCTGGGAC CCGAGCCTTC CAGGCCTCAC
8751 TCTTCCCCTC CCTTCCCTTC CCCAAGGGAA ATGGCCTTTC AGGGTAGGGG
8801 GTAGCTGCCA GGTCTTGGAT GCCTCCCTAG CAGGGCTGGC TGGAAGGGGC
8851 CACAGAGACC ACCCTGTCCC TGCAACAAAA TAGAGGCTTA AGTGTGAGTC
8901 CTCCCCTGGT GGGGCAGCAG GATGTCATGT GCCATCAGAT GGCATCTTTT
8951 CTGGAGGTCT CTCTGCCCCT GGTCCTGGGC AGGCCCTTTC TCCCCTGCTG
9001 CTCTCCCTTT CCCCCTCCCA GGGCTCACGC CCCCTCAGAA TGGAGGCTGC
9051 TGACCCCGGG TCCCCTGCCC TGCAGAACCT GTACCGACTG GAAGGGGAAG
9101 GCTTTCCTAG CATTCCTTTG CTCATCGACC ACCTACTGAG CACCCAGCAG
9151 CCCCTCACCA AGAAGAGTGG TGTTGTCCTG CACAGGGCTG TGCCCAAGGT

FIG. 3D

Docket No.: CL001183DIVII
Serial No.: (to be assigned)
Inventors: W iniu GAN et al.
Title: ISOLATED HUMAN KINASE...

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 9201 GAGCCTGCAC CCAGCCTGGC CCATGCCACC TGTGGCAGGG CTTGGGGAGT
 9251 GTGGGTCAGG CCCACCCAGC GTCTGAGCAG AAAGGGCTTT CCAGGCCCTC
 9301 CGTCTACATA CAAGATGCAG AGTGAGTGAC CCTCAGGGCC AGCCTTGCTC
 9351 TAGGTTTGGA ATGTCAGGGC CACTCCTATG CCATGGGCTG TACACACCAG
 9401 GTTGGTGCTT ACCTGGTCAG GGCACCTGCC TGGACCCCGT AGTCATCTCA
 9451 GTGTGCTCCC CACGTGGTCC CACCCCTGGT CACATATGGA GGCGCCAAAA
 9501 AATGGAGGAC ACAGCCCTTC TAAGGGCCCA GCACCCCTTT TCTTCAGACT
 9551 TCTGATCCCC TGTCTCCTCT CTTCCCCAGG ACAAGTGGGT GCTGAACCAT
 9601 GAGGACCTGG TGTTGGGTGA GCAGATTGGA CGGGTGAGTG CGCCTCTGCT
 9651 GGCCTCCTTG TCGCTGGCGA CTTCTCCTGA GTCGCGCCTG GGCCCCCTGC
 9701 CCTACCACCC AGAAACCTCC CTGCCCCATC TGATTCCCCA CTTGTACCCC
 9751 GACTCCCTGC CCAGCCCCCA CCACACACCA TCCTCCAGGA AACGGGACAG
 9801 TACCTACGCT GAAAACTCCC AGCAGACAGC TCTGCCAGCA CCCTGACCTC
 9851 ATCACCCCCA CCCAGGCCGC CCCCATCGAG CTCTTGTGTG CACGCAGGGA
 9901 GACACCCTGT TACTGTAAGC CATAAGATAC CTGTTTAGGG AAGAAGTCAC
 9951 TGTCCTAAAA ATCAGAATGC TTTTCAAACC CAAGGGAGAG TGATTTTTGG
10001 ATTTCCATGT CACTTCTCTC AGGAAGGGTG GCACATCGGA GGCAACTTTC
10051 CCTGCCTGCC CCATGTGCTC TCTAGGTTCC CCAGCGAGGG TCAAACTCCC
10101 AGAGAGCCTG GGTGGAGGGG TCCGAACACG GGGGCCCCTC ACCCAGGGGT
10151 AGGAAGCAGA ATGGGTAGGA AGCGGAGAAG AGAACTGCGG GACTGGGAAG
10201 GCCGTGGTAG GAGCCCAAGA CCGTTTCAGG GGAACTTTGG CGAAGTGTTC
10251 AGCGGACGCC TGCGAGCCGA CAACACCCTG GTGGCGGTGA AGTCTTGTCG
10301 AGAGACGCTC CCACCTGACC TCAAGGCCAA GTTTCTACAG GAAGCGAGGT
10351 GGGTGATAAA CTAATGATCA CCACGGGTCC CGCATACACA GAGGTTACAC
10401 TGCATGGCAC AGTGTGAAGT GCTTGACCAC CGTGGTGGTG TTTAGTCCTC
10451 GAGGCCCCCC ATTGCGGGTA GTACCCCCTT ATAGTGCCGA AGGGTAGAGG
10501 CTGCCCCAGG TCACACGTCC GGGTCTGCTG GCCTTGGAGG CCAAGCTCTT
10551 CTCCCATCAT CCCTGGGGGG CCCTGGGGAG GCGGGCCTGG CCACGTAGAT
10601 CCTGAGCAGC AGTGCCCTCC AGGATCCTGA AGCAGTACAG CCACCCCAAC
10651 ATCGTGCGTC TCATTGGTGT CTGCACCCAG AAGCAGCCCA TCTACATCGT
10701 CATGGAGCTT GTGCAGGGTG AGCGCGGGGC GCTGAGCTCC AGGTAGGGCG
10751 CGCAGCCTGG TCAGGTGGCA GCCTTACCTC AGGAGGCTCA GCAGGGGTCC
10801 TCCCCACCTG CAGGGGGCGA CTTCCTGACC TTCCTCCGCA CGGAGGGGGC
10851 CCGCCTGCGG GTGAAGACTC TGCTGCAGAT GGTGGGGGAT GCAGCTGCTG
10901 GCATGGAGTA CCTGGAGAGC AAGTGCTGCA TCCACCGGTG AGTGGGCGGT
10951 GGCCACGGGC CCTGCCAACA CCCCCGACCA GAGTCAAGAG GTACCTATAC
11001 CCCTAGGGCC CCCCGCTGGA CCATCAGGCA TCAGCTCCAG AGGGGGAGTT
11051 GGCCTCTGTG GTAGACAGGG GTGCCCAGGG CCGGGAGCAG CTTTTGTCCT
11101 TGGCTTTCCT AGAGTGTTCA GCCAGGGCTG GCAGGCGAC TGTTGGCCAA
11151 ATGAGCCCCT GCCCTGTCTC ACCCAGGGAC CTGGCTGCTC GGAACTGCCT
11201 GGTGACAGAG AAGAATGTCC TGAAGATCAG TGACTTTGGG ATGTCCCGAG
11251 AGGAAGCCGA TGGGGTCTAT GCAGCCTCAG GGGGCCTCAG ACAAGTCCCC
11301 GTGAAGTGGA CCGCACCTGA GGCCCTTAAC TACGGTACCT AGTCCCTGTC
11351 TACCCTGGAC TCCATGGCCA GAGGCCAGGC CTGGGTCCTG CCGGCTGCCT
11401 CGCCCTGGCC CCAGGGAGGG TGCACTCACG CTGCCTCACC TCCTCGCCTC
11451 CTCTGCAGGC CGCTACTCCT CCGAAAGCGA CGTGTGGAGC TTTGGCATCT
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FIG. 3E

Docket No.: CL001183DIVII
Serial No.: (to be assigned)
Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

11501 TGCTCTGGGA GACCTTCAGC CTGGGGGCCT CCCCCTATCC CAACCTCAGC
11551 AATCAGCAGA CACGGGAGTT TGTGGAGAAG GGTAAGCACC CTGTGATGAC
11601 AGCAGCCTCA GGCTGCACCC TCTTCCAGAT GCTCCAGCCG GACTCTTCTA
11651 ACTCCCTTAA TGCCAACCTT CCCACCAGGC AGAATAAGAA TAACCTGGCC
11701 AGTTGCTCAC GCCTGTCATC CCAGCACTTT GGGAGGCTGA GCTGGGTGGA
11751 TCACTTGAGC CCAGGAGTTC AAGATCAGCT TGGACAACAC AGTGAAACTC
11801 CATCTGTACA AAAAATACAA AAATAGACTG GGCACGGTGG CTCACACCTG
11851 TAATCCCAGC ACTTTGGGAG GCCGAGGCAG GTGGATCACC TGTGGTCAGG
11901 AGTTTGAGAC CAGCCAGACC AACATGGTGA AACCCCATCT CTACTAAAAA
11951 TACAAAAATT AGCCAGGCAT GGTGGCACGT GCCTGTAATC CCAGCTACTT
12001 GGGAGGCTGA GGTGGGAGAA TTGCTTGAAC CCAGGAGGCG GAGGCTGCAG
12051 TGAGCCGAGA TTGTGCCACT GCACTCCAGC CTGGGCGACA AGAGTGAAAC
12101 TCCATCTCAA AAAAAACCAA AAAACAAAAA ATACAAAAAT TAGCTGGGTG
12151 TGGTGACATG CGCCTGTAGT CCCTGCTACT CGGGAGGCTG AGGTGGGAGG
12201 ATCACTGGAG CCCGGGAGGT GGAGGTTGCA GTGAGCTGAG ATCATGCCAC
12251 TGCACCCCAA CCTGGGTGAC AGAGAGAGAG AGAGACCTTG ACTCGAAAAA
12301 GAAAAAAACC TGGGCGCAGT GGCTCACGCC TGTAATTTCA ACATTTTGGG
12351 AGGCTGAGGA AGGTGGATCA CTTGAGTCTA GGAGTTTGAC ACTAGCCTGG
12401 CCAACATGGC AAAACCTGTC TCTACTAAAA ATACAAAAAA TTAGCGAGGT
12451 GTAGTGGTGC AAGCCTGTAA TCCCAGCTAC TTGGGAGGCT GAGGCACAAG
12501 AATCGCTTGA ACCTGGGAGG TGGAGGTTGC AGTGAGCTGA GATCACACCA
12551 CTGCATTCCA GCGTGGGTGA CAGAGCAAGA CTCCATCTCA GAAAAAGAAA
12601 AAAAAAATA GAATATCCCT GTAGCTACTA CTGAGTGAGC ACCTGGTCTG
12651 TGCTAGGTCA CATGTTATTT CATTTGCTCA TCACTACATG TGTGGTAGGG
12701 ATTAATATGT CCCTTTCTCA GATGGAAAAA CAGGCTGGCA GAGGGGACAC
12751 AGCTAGCACG TGGTAGGATT AGGATCAGAA GCCAGGCCTC TTTGTCCTTT
12801 GGGCCCTTGG TGGAGAACAG TGCATCCTTC AGAACAGTGC ATCTTAAGCA
12851 GCTCCTATGG CTCATGGTAT CCCCCAGAGT CTGCCGAGGA CCCTCAAACT
12901 CCCTCCTCAT GCCTGGTGTG CTGTGCCTCT CCTCACAGGG GGCCGTCTGC
12951 CCTGCCCAGA GCTGTGTCCT GATGCCGTGT TCAGGCTCAT GGAGCAGTGC
13001 TGGGCCTATG AGCCTGGGCA GCGGCCCAGC TTCAGCACCA TCTACCAGGA
13051 GCTGCAGAGC ATCCGAAAGC GGCATCGGTG AGGCTGGGAC CCCCTTCTCA
13101 AGCTGGTGGC CTCTGCAGGC CTAGGTGCAG CTCCTCAGCG GCTCCAGCTC
13151 ATATGCTGAC AGCTCTTCAC AGTCCTGGAC TCCTGCCACC AGCATCCACA
13201 CTGCCGGCAG GATGCAGCGC CGTGTCCTCT CTGTGTCCCT GCTGCTGCCA
13251 GGGCTTCCTC TTCCGGGCAG AAACAATAAA ACCACTTGTG CCCACTGAAC
13301 ACTCCTGGCA TGTGCACTCC TCTGGAAGGC AGGTCTCAGA AGGCACAAGT
13351 GCCGGTATGG TGGCCTTGGG GAAGGAGGAG GACAGGCAGT ATGCATGGGG
13401 CAGAGCTGAC ATGATTTAGT AGCAGCTGGA TGTGAGACAT GCGGAAGGCG
13451 GGGGAGAGAT CAGGATGATA TACAGGCTAT GGCCAGATGG CGGTGTCATC
13501 CCCTGAAATA GGATTATAGG AAGAGGATCA GAGCTTCGAG GAGGATGTTG
13551 AGTTTAGAGA TGTTGCATTT TATTGGAGAT AAAAGTGTGG GTGAAGCCAG
13601 GTGTGGTGGT AGACACCTGT AGTCCCAGGT ACTTGGGAGG CCAAGGCATG
13651 TGGATTGCTT GAGCCTAGTT TGAGACCAGC CTGGGCAACA TGGCAAAACT
13701 CCATCTTTAC AAAAACAAAA AACAAAAAAC AAAAAACCAA GTAAAATTAG
13751 CCAGGCGTGG TGGCACACAC CTATAGTCCC AGCTACTCAG AAGGCTGAGG

FIG. 3F

Docket No.: CL001183DIVII
Serial No.: (to be assigned)
Inventors: W iniu GAN et al.
Title: ISOLATED HUMAN KINASE...

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13801 TAGGAGGATC AATTGAGCCT CGGAGGTCGA GGCTGCAGTG AGCTGTGATC
13851 ACACCACTGC ATTCCAGCCT GGGCAACAAA GCGAGGCCCT GTCTCAAAAA
13901 TAAGTAAATA AAAATAATAA ATAATTAATT TAAAATGTAG ATGAATAGGT
13951 CTGGAAGCCC AGATGGAGAT GAAGGCTGGC AATAGATGTG TGAATCATTG
14001 GCTTATGAAT ATTAGAGAGT AGCTGACACT ATGGATGCGT ATAACACTCG
14051 CATAAAATTC AGGAGGAGAT GAGAAGAGAG TTCCACTCAA AGAAGACTGA
14101 TGTGGCTGAT GAGGAAGAAA ATGCTTTTGA GGGAGTTGTT TCTCAAGATG
14151 AATTTATTGA GGAATAAGAT GGCAGACTGG GGAGCCTTCA CCTCCTCCCC
14201 TAAGTCCCAG TGAAACCTAA AAAGTCATCT GAAATATTAA CATCACCAAA
14251 AGCGAAGTTT GAGAAGATAA GGAAGTATGA ACATAACTAA AAAACAAAGT
14301 GGGAAACATT TGTAATACAG AACAGGGCAA TGAAAACCTT GAAGTAAAAT
14351 GGCCATCCCT CAAGAAAGTT CAGGAAATAG TTAACATCAG CTGGGTGCAG
14401 TGGCTCACAC CTATAATCCC AGCACTTTGG AAGGCTGAGG CAGGTGGATC
14451 ACCTGAGGTC AGGAGCTCGA GACCAGTCTG GCCAACATAG TGAAACTCCG
14501 TCTCTGCTAA AAATACAAAA AAAATTAGCC AGGCGTGGTG GTGTGCACCT
14551 GTAATCCCAG CTACTCTGGA GGCTGAGAAG GGAGAATTCC TTGAACCGGG
14601 GAGATGAAGG TTGGAGTGAG CAGAGACCGC GCCATTGCAC TCCAGCCTGG
14651 GCAACAAGAG CGAAGAACAA AACTATGTCT CAAAAAAACA AAACACAGCA
14701 AACAAAAATC TATTTTGAAA GAGATGAGAG TGAGCCATAT AACTTGTTTA
14751 AACAAAAGGA AGTTGTGTTG TCGTGTAATT AAATGAAAAT ACTAGGAAGT
14801 GAAATAATAC CTCCAATGGA AATGGTAGAA AGCAGAACTG AAAAACTTCT
14851 GCTAGGTAGG ATATGGTAGG TCTCTGCACG CCACCACTCC CATTGCAACC
14901 GCTAGGGAAA AAACAGCTAA GATGAAAATG TCTTTTTTTT TCTTTTTTTT
14951 TTTTTTTTGA GATGGAGTCT CGCGCTGTTG CACAGGCTGG AGTGCAGTGG
15001 CGCGATCTCA GTTCACTGCA ACCTCTGCCT CTCGGGTTCA AGCGATTCTC
15051 CTGCCTCAGC CTCCTGAGTA GCTGGGATTA CAGGCACGCA TCACTCACGA
15101 GCGGCTAATT TTTGTAATTT TAGTAGAGAC GGGGTTTCAA CATGTTGGTC
15151 AGGCTGGTCT CAAACTCCTG ACCTCAAAGT GACCCGCCCA CCTCGGCCTC
15201 CCAAAGTGTT GGGATTACAG GGATGAGCCA CCACGCCTGG CCGAAATGTC
15251 TTATTTTTAA AAAGAATGAA GAGTGGTCAC AGAAATAAAG ACTGAAT    (SEQ ID NO:3)
```

FEATURES:

Start:	2563
Exon:	2563-2775
Intron:	2776-2927
Exon:	2928-3101
Intron:	3102-4476
Exon:	4477-4573
Intron:	4574-4702
Exon:	4703-4886
Intron:	4887-6827
Exon:	6828-6965
Intron:	6966-7038
Exon:	7039-7158
Intron:	7159-7361
Exon:	7362-7484

FIG. 3G

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Serial No.: (to be assigned)
Inventors: Weiniu GAN et al.
Title: ISOLATED HUMAN KINASE...

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Intron:  7485-7614
Exon:    7615-7801
Intron:  7802-7923
Exon:    7924-8007
Intron:  8008-9075
Exon:    9076-9198
Intron:  9199-9579
Exon:    9580-9633
Intron:  9634-10229
Exon:    10230-10348
Intron:  10349-10622
Exon:    10623-10717
Intron:  10718-10813
Exon:    10814-10937
Intron:  10938-11176
Exon:    11177-11334
Intron:  11335-11458
Exon:    11459-11581
Intron:  11582-12938
Exon:    12939-13078
Stop:    13079
```

CHROMOSOME MAP POSITION:
Chromosome 15

ALLELIC VARIANTS (SNPs):

DNA Position	Major	Minor	Domain	Protein Position	Major	Minor
28	C	T	Beyond ORF(5')			
847	A	G	Beyond ORF(5')			
2159	G	C	Beyond ORF(5')			
2484	C	T	Beyond ORF(5')			
2577	T	C	Exon	5	S	S
2808	–	T C	Intron			
2922	G	A	Intron			
4312	C	T	Intron			
4903	G	A	Intron			
5193	A	G	Intron			

Context:

DNA
Position
28   CTGGCCACCAGGCTGGCGCAGCCAAGG
          [C,T]
          CGAAGCTCTGGCTGAACCCTGTGCTGGTGTCCTGACCACCCTCCCCTCTCTTGCACCCGC

FIG. 3H

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CTCTCCCGTCAGGGCCCAAGTCCCTGTTTTCTGAGCCCGGGCTGCCTGGGCTGTTGGCAC
TCACAGACCTGGAGCCCCTGGGTGGGTGGTGGGGAGGGGCGCTGGCCCAGCCGGCCTCTC
TGGCCTCCCACCCGATGCTGCTTTCCCCTGTGGGGATCTCAGGGGCTGTTTGAGGATATA
TTTTCACTTTGTGATTATTTCACTTTAGATGCTGATGATTTGTTTTTGTATTTTTAATGG

847   ATGCCGGGGGGTTCATAGGTCACTGGCTCTCCAAGTGCCAGAGGTGGGCAGGTGGTGGCAC
         TGAGCCCCCCCAACACTGTGCCCTGGTGGAGAAAGCACTGACCTGTCATGCCCCCCTCAA
         ACCTCCTCTTCTGACGTGCCTTTTGCACCCCTCCCATTAGGACAATCAGTCCCCTCCCAT
         CTGGGAGTCCCCTTTTCTTTTCTACCCTAGCCATTCCTGGTACCCAGCCATCTGCCCAGG
         GGTGCCCCCTCCTCTCCCATCCCCCCTGCCCTCGTGGCCAGCCCGGCTGGTTTTGTAAGAT
         [A,G]
         CTGGGTTGGTGCACAGTGATTTTTTTCTTGTAATTTAAACAGGCCCAGCATTGCTGGTTC
         TATTTAATGGACATGAGATAATGTTAGAGGTTTTAAAGTGATTAAACGTGCAGACTATGC
         AAACCAGGCCCAGTCTCCAGTGTGGTACCGTTGCTCCTGCATCGCAGCTGAGGATAGGGG
         GCCAGTTAGGCCTACACAGTGGCCTGCCTGCCTGGATGTGGGCCCAAGTCAGAAGGCCAA
         AGTCCTCCAAGGGGCGGGAGGATGCGCCAGCCCCTAGTGGAGGAGCTGGTGCCCCTGGGG

2159   TGCGGCCCAGCGCGGAGCAGGGGGGCTGGCAGGCGTCGGGACGGTCGGGCCGGTCCCGCC
         CGCCCCTTCCCCTCCACAGGCCCGCCCCGGGGCCTGGGCCAACTGAAACCGCGGGAGGAG
         GAAGCGCGGAATCAGGAACTGGCCGGGGTCCGCACCGGGCCTGAGTCGGTCCGAGGCCGT
         CCCAGGAGCAGCTGCCCGTGCGGGTACCTCTAGCCCCGGGGCCTGGAGGAGCGGTGGGAG
         CTGGGGGCGCGGCAGGCAGGGGCAGAGCAGGCGTTCCGAGGGCCAGAGACCCACCCAGGT
         [G,C]
         GGGGTAGGGGCCGCGGAAGGGCGGGGATGGCCGCAGGGGCAGGGCTCAGGCTGTGGGCGC
         CTGAGGCTTCAGCTGGGGCAGGCTTGGCCTGTCGAGGACCTGGGCAAGGGTGTCCCTGTA
         AGGGGTGGTGGGTGGAAGGGCCTGGGGAGGGAGGCTCCAGGTTGGCTCCTGTTCCCGAAC
         GTGCGGAGGAGACCCTGACGCTAAGGAAGCAATGAGGGCCAGTCCCCAGGCCAGGCTGCT
         GCTGGGTACCCATGGCTGCGTGTGAGCGAGGCAGGACCCCACCTCCTCCCCGTCTGCAGT

2484   GGATGGCCGCAGGGGCAGGGCTCAGGCTGTGGGCGCCTGAGGCTTCAGCTGGGGCAGGCT
         TGGCCTGTCGAGGACCTGGGCAAGGGTGTCCCTGTAAGGGGTGGTGGGTGGAAGGGCCTG
         GGGAGGGAGGCTCCAGGTTGGCTCCTGTTCCCGAACGTGCGGAGGAGACCCTGACGCTAA
         GGAAGCAATGAGGGCCAGTCCCCAGGCCAGGCTGCTGCTGGGTACCCATGGCTGCGTGTG
         AGCGAGGCAGGACCCCACCTCCTCCCCGTCTGCAGTCCATCCTGACCCTACAGTCCCCAG
         [C,T]
         CTCCTCGTCCCATGCCTCCGTCTCCAGCTGCTGCCTTGCCTCCAGGGATGGCCCCTTTTC
         TGTCCCCAGAACAGCACTATGGGCTTCTCTTCTGAGCTGTGCAGCCCCCAGGGCCACGGG
         GTCCTGCAGCAAATGCAGGAGGCCGAGCTTCGTCTACTGGAGGGCATGAGAAAGTGGATG
         GCCCAGCGGGTCAAGAGTGACAGGGAGTATGCAGGACTGCTTCACCACATGTCCCTGCAG
         GACAGTGGGGGCCAGAGCCGGGCCATCAGCCCTGACAGCCCCATCAGTCAGGTGGGTCTC

2577   GTAAGGGGTGGTGGGTGGAAGGGCCTGGGGAGGGAGGCTCCAGGTTGGCTCCTGTTCCCG
         AACGTGCGGAGGAGACCCTGACGCTAAGGAAGCAATGAGGGCCAGTCCCCAGGCCAGGCT
         GCTGCTGGGTACCCATGGCTGCGTGTGAGCGAGGCAGGACCCCACCTCCTCCCCGTCTGC
         AGTCCATCCTGACCCTACAGTCCCCAGCCTCCTCGTCCCATGCCTCCGTCTCCAGCTGCT
         GCCTTGCCTCCAGGGATGGCCCCTTTTCTGTCCCCAGAACAGCACTATGGGCTTCTCTTC

FIG. 31

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Title: ISOLATED HUMAN KINASE...

[T,C]
GAGCTGTGCAGCCCCCAGGGCCACGGGGTCCTGCAGCAAATGCAGGAGGCCGAGCTTCGT
CTACTGGAGGGCATGAGAAAGTGGATGGCCCAGCGGGTCAAGAGTGACAGGGAGTATGCA
GGACTGCTTCACCACATGTCCCTGCAGGACAGTGGGGGCCAGAGCCGGGCCATCAGCCCT
GACAGCCCCATCAGTCAGGTGGGTCTCTATGGGACTCTGGTGGGTGCTGGCGTATCTGCC
TTCTCCTTCCTCTCCTGGGGGCCCTCTGGGGCAGTGGCTGGAGATCTGGCAGGCCAATGC

2808   CCAGCTGCTGCCTTGCCTCCAGGGATGGCCCCTTTTCTGTCCCCAGAACAGCACTATGGG
CTTCTCTTCTGAGCTGTGCAGCCCCCAGGGCCACGGGGTCCTGCAGCAAATGCAGGAGGC
CGAGCTTCGTCTACTGGAGGGCATGAGAAAGTGGATGGCCCAGCGGGTCAAGAGTGACAG
GGAGTATGCAGGACTGCTTCACCACATGTCCCTGCAGGACAGTGGGGGCCAGAGCCGGGC
CATCAGCCCTGACAGCCCCATCAGTCAGGTGGGTCTCTATGGGACTCTGGTGGGTGCTGG
[-,T,C]
GTATCTGCCTTCTCCTTCCTCTCCTGGGGGCCCTCTGGGGCAGTGGCTGGAGATCTGGCA
GGCCAATGCTTGGGAGCCATTGTGCCCCCCTCCCTGCCTCCCCCATCTGTGCTGTATAGT
CCTGGGCTGAGATCACCAGCCAAACTGAGGGCCTGAGCCGCTTGCTGCGGCAGCACGCAG
AGGATCTGAACTCAGGGCCCCTGAGCAAGCTGAGCCTGCTCATCCGGGAACGGCAGCAGC
TTCGCAAGACCTACAGCGAGCAGTGGCAGCAGCTGCAGCAGGAGCTCACCAAGGTGAGCG

2922   GGAGGCCGAGCTTCGTCTACTGGAGGGCATGAGAAAGTGGATGGCCCAGCGGGTCAAGAG
TGACAGGGAGTATGCAGGACTGCTTCACCACATGTCCCTGCAGGACAGTGGGGGCCAGAG
CCGGGCCATCAGCCCTGACAGCCCCATCAGTCAGGTGGGTCTCTATGGGACTCTGGTGGG
TGCTGGCGTATCTGCCTTCTCCTTCCTCTCCTGGGGGCCCTCTGGGGCAGTGGCTGGAGA
TCTGGCAGGCCAATGCTTGGGAGCCATTGTGCCCCCCTCCCTGCCTCCCCCATCTGTGCT
[G,A]
TATAGTCCTGGGCTGAGATCACCAGCCAAACTGAGGGCCTGAGCCGCTTGCTGCGGCAGC
ACGCAGAGGATCTGAACTCAGGGCCCCTGAGCAAGCTGAGCCTGCTCATCCGGGAACGGC
AGCAGCTTCGCAAGACCTACAGCGAGCAGTGGCAGCAGCTGCAGCAGGAGCTCACCAAGG
TGAGCGGGCAGCACTGGGGCTTCGGTCATTTCTGTCTAAATTTTGAGCCTCGAAGGGGTT
GTTTTGCACAAGAGGCCCTGGATTCACTGGGGAAGTGTAAGTCCCTGACCGCAGGCCTGG

4312   GGACGAGAACACTGATCTCGGGCTGTCATCTATTCCTACTGCCAAGAACATAATTTGCAG
GACCCAGTGCAAAGTGAAATTGTGGGGGTCTTTGTTAAAAGATTGCTAGGAATTTCCAGG
TGGCAATAATGGAGAATGAAACCAAGCACAGGGCCCTTCTACATGTGGAGCCCCGTGTGA
CTGCACAGGCCGTGCACACCTGCAACTGGCCCTGCCTGCCACCAGGCTACCACTGTCAGT
CCAAGGAGGGACCGTTGTAGCCTGTAGTCTACCTCTTTGCCTCCCCAAGGGGTCTGTCTT
[C,T]
AACAGGCTCTCTGATCTTTGACTCTCACGTCAGCAGCCAGCTTTCCCAGAAGTCTCCAGG
TGCTCCTTGCCTGACGACAGGACCTTTCCAGGGCTTCACCCCAGGCAAGAATCTTCCACA
ACTGGGGACCTGCTGCCCCACACTGGCCTCTCCTCTCTCCCTAGACCCACAGCCAGGACA
TTGAGAAGCTGAAGAGCCAGTACCGAGCTCTGGCACGGGACAGTGCCCAAGCCAAGCGCA
AGTACCAGGAGGCCAGCAAAGGTTCGTGGCTTCCCTTGCTGGCAGGGAGGGAATCCGAAG

4903   GAATCCGAAGCCAGTGCTGACCTGTCCTTGGGTACCCAGAGAGTGGGGGCTGCCTGGGCC
TCCATGCTGTCATCTATACCCCTTGCCCCCCTTCTGGCAGACAAGGACCGTGACAAGGCC
AAGGACAAGTATGTGCGCAGCCTGTGGAAGCTCTTTGCTCACCACAACCGCTATGTGCTG

FIG. 3J

Docket No.: CL001183DIVII
Serial No.: (to b assigned)
Inventors: Weiniu GAN t al.
Title: ISOLATED HUMAN KINASE...

GGCGTGCGGGCTGCGCAGCTACACCACCAGCACCACCACCAGCTCCTGCTGCCCGGCCTG
CTGCGGTCACTGCAGGACCTGCACGAGGAGATGGCTTGCATCCTGTAAGCCCGCAGCCCC
[G,A]
TCCCCTGGCCCCCACCCTTGAGCAGCCCTAAGCCCAGCCATCAGGCCCAGAGGCAGGACC
CAGAAAATCCATTGCTGGGAAGGTGCTGGCCATGTAACCACATGAGAACGGGACCTGGGC
CAAGGATTGGAAACAGGCAACTTACCTCTGAATTACACTATTCCAGGGTCTCATTATTCC
AGGGTTTTATTACATTCATTGAGCACTGTTCTGGGCTCTGGATTATACCAGAGAACGATG
GTAGACAAAAACATCTGTCCTCAGGGATCTTTCGTGTTAGTGGAGTGAGAATGTGAGGAG

5193   CCGCAGCCCCGTCCCCTGGCCCCCACCCTTGAGCAGCCCTAAGCCCAGCCATCAGGCCCA
GAGGCAGGACCCAGAAAATCCATTGCTGGGAAGGTGCTGGCCATGTAACCACATGAGAAC
GGGACCTGGGCCAAGGATTGGAAACAGGCAACTTACCTCTGAATTACACTATTCCAGGGT
CTCATTATTCCAGGGTTTTATTACATTCATTGAGCACTGTTCTGGGCTCTGGATTATACC
AGAGAACGATGGTAGACAAAAACATCTGTCCTCAGGGATCTTTCGTGTTAGTGGAGTGAG
[A,G]
ATGTGAGGAGCACTAAGAGCCATGGAGAAAAATAAAGCAAGAGAAGTGGATCGGGACCTG
GGAGCACGGAGGCAAGGGAGGAGGTGACAGTTGTCCATAGAGTGATCTGGGAAAGCCTCT
TGAGAGGTGACATTCAAAGAGGCCCCTGAGAGGGGTACGGGAGTGAATCATGGGGCTATT
TGGAGAAAGACCATTCCAGAAAGGAGGACAGCAATTACACAGGCCTTGAGGTAGGAGAGT
ACCAGGGACTAATAGCCAGGAACCAGTGGTGCCTCTGAGAGTGAGGGAGGGGGAGAGTCA

FIG. 3K